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Research

Probing into the impact of EFL teachers' instructional innovativeness on student engagement: A predictive moderated model

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Abstract:

The main purpose of this study is to investigate the impact of English as a Foreign Language (EFL) teachers' instructional innovativeness on student engagement, with specific reference to behavioral and emotional aspects of engagement as perceived by the teachers. Given the ever-changing demands of contemporary education, this study underscores the importance of innovativeness and its influence on student engagement in L2 learning and teaching. The study adopted a cross-sectional design, utilizing a predictive moderated model, also assessing whether various teacher background variables such as educational status, gender, and field of graduation moderate the relationship between instructional innovativeness and student engagement. Data from 144 EFL teachers across Turkiye underwent analysis through partial least squares structural equation modeling (PLS-SEM). It was shown that instructional innovativeness significantly predicts both behavioral and emotional student engagement. However, only educational status, particularly differences between BA and PhD degrees, was found to moderate the impact on behavioral engagement, with no significant moderating effects identified for emotional engagement. In conclusion, this study highlights the merit of cultivating and fostering a culture of innovation among ELT practitioners to benefit students.

Keywords: EFL, innovation, engagement, technology, PLS-SEM

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INTRODUCTION

Student engagement has long been recognized as a critical component in educational settings, influencing learning outcomes and overall student success. Defined as the extent to which students are involved in and committed to their learning, student engagement encompasses behavioral, emotional, and cognitive aspects of participation in educational activities (Fredricks et al., 2004). Within the context of learning and teaching English as a Foreign Language (EFL), student engagement is particularly paramount due to the need for active involvement in the learning process. Concurrent with the emphasis on student engagement is the significance of instructional innovativeness among EFL teachers. As the global landscape transforms, instructional strategies and instruments are also evolving to better engage and empower students. Teachers' adoption of instructional innovations, influencing and influenced by organizational dynamics, school climate, and classroom environment, revolutionizes teaching practices and the overall educational landscape through the incorporation of emerging methodologies and technologies. In this respect, teachers' openness to embracing innovative teaching practices is a fundamental factor in enhancing educational outcomes (Ghaith & Yaghi, 1997). Teachers display innovative approaches through different aspects such as goal-setting, updating curricula, adopting new teaching methods, improving interactions, and integrating advanced technologies (Salessi & Etchevers, 2020). Instructional innovation also transcends the boundaries of the physical classroom, extending to the virtual and blended learning environments (Kurucova et al., 2018). Through online learning platforms and virtual classrooms, EFL practitioners have unprecedented access to innovative pedagogical tools and resources that surpass spatial constraints and temporal limitations. As a result, recognizing that engagement is not a passive state but an active process, EFL teachers are increasingly turning to innovative methods to invigorate their classrooms. Whether through project-based learning, flipped classrooms, gamification, Web 2.0, or other innovative modalities, teachers consistently exert effort to create vibrant learning environments conducive to L2 development.

In the sphere of education, the dynamics between teachers' innovative practices and student outcomes are highly compelling. More specifically, the link between EFL teachers' adoption of instructional innovations and L2 learners' engagement, typically represented through educational technologies rather than the notion of 'innovation', is a topic of increasing interest and relevance in L2 research. Recent studies underscore the importance of adaptive and creative instructional methodologies in EFL settings, highlighting how they significantly influence student engagement. Insights have been derived from both within and outside the L2 domain. For instance, a meta-analysis by Means et al. (2013) stresses the efficacy of blended learning approaches, which integrate face-to-face instruction with online educational activities, in promoting student engagement and academic success. Likewise, research by Afzal and Rafiq (2022) demonstrated that effective instructional techniques are associated with increased student involvement in class, reinforcing that innovative teaching

strategies tailored to the needs of EFL students can bridge gaps in engagement that traditional methods fail to address. Abdelhalim (2017) focused on reading engagement in EFL contexts and proposed specific instructional strategies aimed at improving students' reading comprehension, showing that the overall training and strategies applied promoted students' active engagement. Moreover, Teng and Wang (2021) examined the influences of two types of educational technology on student engagement in Chinese EFL courses, that is, social networking systems and learning management systems. Their findings suggested that both have significant effects on tridimensionality of student engagement. Alsowat (2016) examined the flipped classroom teaching model in EFL contexts and found that flipped learning leads to gains in students' L2 higher-order thinking skills, engagement, and satisfaction.

The necessity for innovation among teachers is driven by rapid technological and social advances in society. Despite this need, there has been limited research into the notion of innovativeness of teachers, including the factors that influence it and the potential outcomes it can yield (Thurlings et al., 2015). This study sets out to explore the impact of EFL teachers' instructional innovativeness on student engagement, particularly focusing on behavioral and emotional engagement as perceived by teachers. Since cognitive engagement depends on age and capabilities (van Uden et al., 2013), this study centered specifically on the behavioral and emotional aspects of student engagement (Mih et al, 2015; Shih, 2008; Thomas & Baral, 2023). This study also examines the moderating effect of various background variables, including educational status, gender, and field of graduation, on the relationship between instructional innovativeness and student engagement. By examining these relationships, the study uncovers whether EFL teachers' innovativeness influences perceived student participation and interest in learning, and how this relationship may vary across different teacher demographics. With these considerations in mind, this study proposed the following hypotheses.

H1: EFL teachers' instructional innovativeness predicts students' behavioral engagement.

H2: EFL teachers' instructional innovativeness predicts students' emotional engagement.

H3: EFL teachers' background variables, i.e., educational status, gender, and field of graduation, exert a moderating effect on the relationship between their instructional innovativeness and students' behavioral engagement.

H4: EFL teachers' background variables, i.e., educational status, gender, and field of graduation, exert a moderating effect on the relationship between their instructional innovativeness and students' emotional engagement.

Behavioral and Emotional Engagement

Fredricks et al. (2004) proposed a multifaceted model of student engagement that consists of three interconnected dimensions: behavioral, emotional, and cognitive. Behavioral engagement is characterized by appropriate behavior in school settings, active participation in academic tasks, and involvement in school-related activities. Emotional engagement encompasses the range of feelings students experience at school toward peers, teachers, and learning in general, such as happiness, sadness, boredom, anxiety, and curiosity (Jimerson et al., 2003). Cognitive engagement, on the other hand, focuses on students' cognitive investment in learning, that is, the mental operations they employ when tackling academic tasks, along with the variety and effectiveness of the strategies they utilize (Walker et al., 2006). Beyond behavioral, emotional, and cognitive aspects, engagement also involves an agentic dimension, which entails "students' constructive contribution into the flow of the instruction they receive" (Reeve & Tseng, 2011, p. 258).

Though no consensus exists on which components of engagement are more essential, studies often incorporate the behavioral and emotional elements of engagement (Lee, 2012). In line with the focus of the present study, Finn (1989) introduced a model of student engagement that is composed of two main elements: participation and identification. Participation, the behavioral aspect of the model, involves students sticking to school rules, following teacher instructions, and completing their assigned tasks. Identification, that is, the emotional facet, refers to students' feelings of connectedness to the educational institution and their attitudes toward learning. Along similar lines, Skinner et al. (2009) introduced a conceptual framework for understanding student engagement in educational settings, aligning it with traditional motivational definitions. Their framework separates engagement from disaffection, and differentiates between behavioral and emotional aspects of engagement while they do not function independently (van Uden et al., 2013).

METHOD

Research Model

Adopting a cross-sectional study design, this study utilizes a predictive moderated model to investigate the relationship between EFL teachers' instructional innovativeness and the two dimensions of student engagement, and potential moderating influences of a number of teacher background factors in this relationship. The research model is provided in Figure 1.

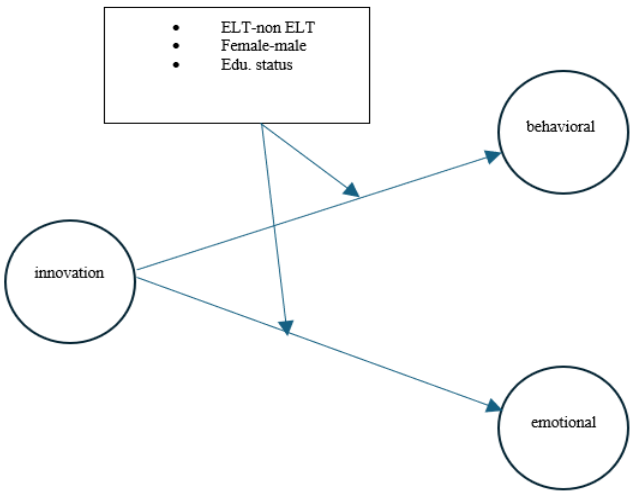

Figure 1
Research Model

Participants

The sample consisted of 144 English as a Foreign Language (EFL) teachers from different geographical locations across Turkiye. The majority of the sample were female teachers (*n*= 112), with 31 males, and one teacher who chose not to reveal their gender. The average age and professional experience of the teachers were 36.9 and 13 years, respectively. The educational makeup of the sample featured 38 teachers with Bachelor's degrees, 89 teachers with Master's degrees (ongoing or completed), and 17 with doctoral degrees (ongoing or completed). Most of the participants held degrees in English Language Teaching (*n*= 112), while others were graduates of non-ELT programs such as literature and translation (*n*= 32).

Data Collection Tools

Instructional Innovativeness Measurement

The participants' instructional innovativeness scores were obtained from the Instructional Innovation scale comprising four items, a part of the revised version of the School Level Environment Questionnaire (revised SLEQ) developed by Johnson et al. (2007). The authors conducted both exploratory and confirmatory factor analyses, identifying and confirming five hypothesized factors. Teachers responded to the items in the Instructional Innovation scale (e.g., "we are willing to try new teaching approaches in my school.") on a five-point scale ranging from one (strongly disagree) to five (strongly agree). Teachers' responses to instructional innovativeness yielded a mean score above the average ($\bar{X}$=3.27).

Engagement Scale

Student engagement as reported by teachers was measured through "Engagement Versus Disaffection with Learning: Teacher Report" scale which includes four statistically distinguishable sub-scales (Skinner et al., 2009). Given the specific purpose of the current

study, conceptually discerning engagement from disaffection, thereby excluding the disaffection sub-scales, the two sub-scales that measure students' behavioral and emotional engagement were utilized. Both of the sub-scales include five items, with minor modifications applied for the present study, such as "when working on classwork in my class, students appear involved." (behavioral), and "in my class, students are enthusiastic." (emotional). The items were rated on a four-point scale ranging from one (not at all true) to four (very true). Teachers' assessments of their students' behavioral and emotional engagement resulted in mean ratings of $\bar{X}$=2.36 and $\bar{X}$=2.96, respectively, which shows the participating teachers perceived their students to be more emotionally engaged than behaviorally engaged.

Data Collection and Analysis

The data collection instruments were administered online for practicality and accessibility. Participation in the study was voluntary, with all participants providing informed consent. Analysis of the data, conducted through SmartPLS 4 software (Ringle et al., 2022) with a 5,000 bootstrap sample, included a three-step procedure. The first step was oriented to the measurement model to examine the reliability and validity of the constructs. In the second step, using partial least squares structural equation modeling (PLS-SEM), the structural model was assessed to reveal the associations between the exogenous and endogenous variables (Hair et al., 2017). In contrast to the commonly used covariance-based SEM (CB-SEM), PLS-SEM uses a variance-based approach, and focuses on maximizing the explained variance in dependent variables (Hair et al., 2021; Jöreskog & Wold, 1982). Moreover, as a composite-based structural model, PLS-SEM is an effective method for theory development and exploratory analysis, without being affected by data distribution issues (Hair et al., 2021; Sarstedt et al., 2011). Thirdly, a multigroup analysis (MGA) was performed to reveal the interaction effects of variables. It is recommended to use PLS-based MGA instead of the traditional t-test approach when analyzing differences between path coefficients (Afthanorhan et al., 2015).

Ethical considerations

Ethical Review Board: Selcuk University, Faculty of Education, Ethical Review Board

Date of Ethics Review Decision: 27.06.2023

Ethics Assessment Document Issue Number: E.780010

RESULTS

Analysis of the Measurement Model

Following the guidelines of Hair et al. (2017), reliability and validity of the reflective constructs were assessed. First, regarding the factor loadings, in the Instructional Innovation scale, one item had a negative loading and was consequently removed. The remaining factor

loadings were at an acceptable range, spanning from 0.84 to 0.93. Composite reliability (CR) and Cronbach's alpha values of the constructs exceeded the threshold of 0.70 (Cohen, 1988). The constructs also had average variance extracted (AVE) values above 0.50 (Fornell & Larcker, 1981). The values, suggesting convergent validity and internal consistency, are presented in Table 1.

Table 1

Validity and Reliability of the Constructs

Latent constructs	AVE	CR	Cronbach's Alpha
Behavioral engagement	0.791	0.876	0.868
Emotional engagement	0.808	0.934	0.921
Instructional innovativeness	0.753	0.835	0.836

Also, cross-loadings, heterotrait-monotrait ratio of correlations (HTMT) ratio, and Fornell-Larcker criterion were utilized to assess discriminant validity. First, cross-loadings of the indicators pertaining to the latent constructs were checked. If an indicator loads higher on a different construct than the one it is supposed to measure, it may be a sign that the indicator is not a good measure of the intended construct. Therefore, as a rule of thumb, each indicator should load higher on its own construct than on any other construct in the model (Hair et al., 2017). This process resulted in the deletion of three items, two items from the Behavioral, and one item from the Emotional Engagement scale. As shown in Table 2, all the remaining items had higher loadings on their intended constructs than on others, with differences in cross-loadings exceeding the 0.10 threshold (Gefen & Straub, 2005).

Table 2

Cross Loadings among the Items of the Latent Constructs

Items	behavioral	emotional	instructional innovativeness
behavioral-1	**0,872**	0,703	0,414
behavioral-2	**0,906**	0,640	0,502
behavioral-3	**0,890**	0,677	0,478
emotional-1	0,662	**0,876**	0,453
emotional-2	0,642	**0,884**	0,346
emotional-3	0,681	**0,926**	0,428
emotional-4	0,716	**0,909**	0,503
instructional-1	0,445	0,427	**0,863**
instructional-2	0,459	0,397	**0,899**
instructional-3	0,462	0,446	**0,840**

HTMT ratio of correlations were also evaluated based on the parsimonious threshold of <.85 (Henseler et al., 2015), revealing satisfactory figures (emotional <-> behavioral = *0.842*; instructional innovativeness <-> behavioral = *0.613*; instructional innovativeness <-> emotional = *0.547*). Finally, Fornell-Larcker criterion, another measure of discriminant validity, was evaluated. The highlighted values in Table 3, that is, the square-roots of AVE, were greater than the estimated correlation values, thereby showing the discriminant validity of the constructs in the model.

Table 3

Fornell-Larcker Criterion

Latent constructs	**1**	**2**	**3**
Behavioral engagement	**0.889**		
Emotional engagement	0.754	**0.899**	
Instructional innovativeness	0.525	0.489	**0.868**

Analysis of the Structural Model

The structural model was tested using a bootstrap sample of 5000, 5% level of significance, and percentile bootstrap confidence interval method. Before reporting the path coefficients and interaction effects, estimation of the fit of the model is provided. To this end, the standardized root-mean-square residual (SRMR) was evaluated as a goodness-of-fit measure. SRMR was found *.059*, demonstrating a good model fit as it is less than the suggested 0.08 (Henseler et al., 2014).

The structural model was evaluated in terms of its explanatory power of the endogenous constructs using R2. The R-squared value is typically regarded as the primary method for assessing the explanatory power of a model (Henseler et al., 2016). Path coefficients were also assessed to reveal the strength of the relationships between the constructs in the model. Findings of the structural model are presented in Figure 2.

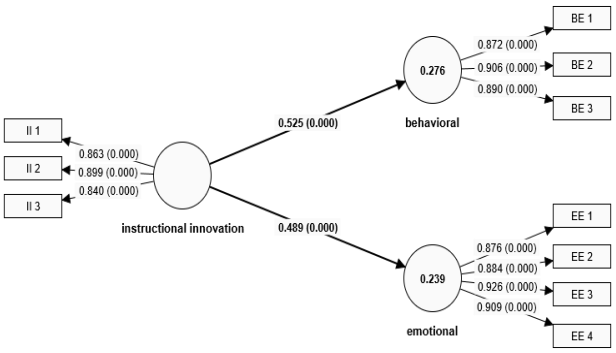

Figure 2

Path Coefficients

The suggested model accounts for 27.6% of the variance in students' behavioral engagement, and 23.9% in their emotional engagement. It was also determined that teachers' instructional innovativeness positively and significantly influences their perceptions of students' behavioral (β = 0.525; t-value = 8.154; p = .000) and emotional engagement (β = 0.489; t-value = 7.665; p = .000). Overall, also shown in Figure 2, the results provide evidence confirming Hypotheses 1 and 2. In other words, teachers' instructional innovativeness has a positive effect on students' both behavioral and emotional engagement.

Multigroup Analysis (MGA)

To demonstrate the estimation of the moderation effects, moderator variables were then included in pairs. A permutation MGA, a commonly used method (Matthews, 2017), was run to investigate the moderating effects of educational status (BA-MA, BA-PhD, MA-PhD), field of graduation (ELT-nonELT), and gender (female-male) on the association between teachers' instructional innovativeness and students' behavioral as well as emotional engagement. As illustrated in Table 4, MGA analyses showed that there were no significant differences between the groups on any of the paths, with the exclusion of BA-PhD comparison in the link between teachers' instructional innovativeness and students' behavioral engagement. These results reveal that neither the field of graduation nor gender serve as moderating factors in the relationship between teachers' instructional innovativeness and students' behavioral and emotional engagement. However, educational status acts as a moderator in the association between teachers' instructional innovativeness and students' behavioral engagement, but not their emotional engagement. The significant moderating effect of educational status was evident only in the comparison of teachers with BA and PhD degrees, with the influence being stronger for teachers with BA than with PhD. As a result, Hypothesis 3 was partly supported whereas Hypotheses 4 was rejected.

Table 4

Multigroup Analysis Results

	Path coefficient			CI	*p* value (2.5%; 97.5%)	Supported
Path	**Male**	**Female**	**Difference**			
Inno → BE	0.602	0.484	0,118	(−0.301; 0.291)	0.455	NO
Inno → EE	0.483	0.496	-0,013	(−0.298; 0.296)	0.921	NO
	Non-ELT	**ELT**				
Inno → BE	0,566	0,530	0,036	(−0.309; 0.306)	0,825	NO
Inno → EE	0,616	0,441	0,175	(−0.283; 0.309)	0,263	NO
	BA	**MA**				
Inno → BE	0,687	0,524	0,163	(−0.307; 0.282)	0,277	NO
Inno → EE	0,404	0,489	-0,086	(−0.290; 0.273)	0,552	NO
	PhD	**BA**				
Inno → BE	0,281	0,687	-0,406	(−0.317; 0.333)	**0,014**	**YES**
Inno → EE	0,701	0,404	0,298	(−0.439; 0.417)	0,156	NO

	MA	PhD				
Inno → BE	0,524	0,281	0,243	(−0.431; 0.318)	0,300	NO
Inno → EE	0,489	0,701	-0,212	(−0.382; 0.236)	0,280	NO

*Inno=instructional innovativeness, BE=behavioral engagement, EE=emotional engagement, CI=confidence intervals, MA=Master's, BA=Bachelor's, PhD=Doctoral education.

*Permutation MGA for MA-PhD was performed using a permutation number lower than the default (1000), probably due to the presence of a smaller number of observations in either group.

DISCUSSION

This study examined the predictive effect of EFL teachers' instructional innovativeness on their students' behavioral and emotional engagement, as well as the potential moderating effects of several background factors such as teachers' educational status, field of graduation, and gender. First and foremost, teachers' ratings regarding their instructional innovativeness being above the average suggests that they may be receptive to adopting new pedagogical advances and innovations, and this could enhance and enrich their teaching strategies and pedagogical instruments. This readiness can facilitate the integration of digital tools, collaborative teaching methods, and personalized learning experiences (Robles, 2013). This way, formal instructional processes likely turn into more interactive sessions which adapt to diverse learning styles, resulting in overall learning effectiveness and satisfaction (Lee, 2011). While readiness to adopt new methods is a valuable instructional asset, it is also essential to acknowledge potential barriers such as resource limitations, resistance from within educational institutions, or a lack of continuous support (Avdeenko, 2020; Rahmat, 2020). Meeting these challenges is crucial for effectively implementing innovative teaching methods, and creating an environment where teachers feel encouraged and supported can lead to a more dynamic and responsive educational system. As evidenced in Makhaya and Ogange (2019), lecturers embrace eLearning not only through knowledge management procedures but also through the institution's efforts to support the community of eLearning.

Moreover, the participating teachers perceived their students to be more emotionally engaged than behaviorally engaged. The case might be that students may feel emotionally connected without necessarily showing high levels of behavioral engagement. Emotional engagement, a kind of involvement linked to motivation, interest, and a sense of belonging (Finn, 1989), involves students' feelings toward different components of the learning ecosystem (Yazzie-Mintz, 2007). Emotions are pivotal elements of student engagement, representing the affective responses students have in the classroom (Fredricks et al., 2004). As suggested by Skinner and Belmont (1993), teachers' actual behavior in the classroom has the strong potential to affect students' emotional engagement. Accordingly, teachers' instructional innovative actions, embedding motivational sustenance into the classroom, might well be one of these engaging patterns. Emotional engagement could also serve as an antecedent of behavioral engagement, which refers to participation in education-related activities such as attendance, involvement in class, and completion of assignments. In

parallel, emotional discomfort could be followed by behavioral disengagement (Wentzel et al., 2010). Altogether this might explain why teachers perceive emotional engagement as more salient, as it could exert more influence on students' motivation and satisfaction with their learning experiences.

In addition to the supplementary insights in the preceding text, the primary finding of the study, confirming Hypotheses 1 and 2, revealed that EFL teachers' innovativeness was a significant predictor of students' both behavioral and emotional engagement. This finding highlights the interconnectedness between teaching practices and student engagement. Innovative teaching practices have the potential to attract students' interest, stimulate their curiosity, and create a supportive learning environment conducive to emotional and behavioral investment (Casado et al., 2012; Lim et al., 2011). As a result, students may exhibit higher levels of participation, and overall engagement with the subject matter. This finding corresponds to a wide array of research findings which define innovation within the boundaries of ICT integration and computer innovations (Eteokleous, 2008; Loogma et al., 2012). As a case in point, the majority of Dutch MA students felt more engaged during lectures when incorporating ICT tools into the learning environment (Zweekhorst & Maas, 2015). Moreover, Wong and Yang (2017) showed the effectiveness of ICT in enhanced students engagement, autonomy, and collaborative efforts. Likewise, Tabatabaei and Gui (2011) revealed the academically engaging and motivating influences of technology use. With specific reference to the research on L2 domain, De Souza et al.'s (2021) study showed that as Filipino teachers of English increasingly embraced student-centered pedagogy for integrating technology into language instruction, students demonstrated heightened engagement and motivation in their learning endeavors.

In the present study, Hypothesis 3 was partly confirmed whereas Hypotheses 4 was totally rejected. In other words, the relationship between teachers' instructional innovativeness and students' behavioral and emotional engagement is not significantly influenced by their field of graduation or gender. However, educational status does play a moderating role. Specifically, when comparing EFL teachers with BA and PhD degrees, the impact of instructional innovativeness on students' behavioral engagement is stronger for teachers with BA degrees. Notably, this moderating effect is not observed in the case of emotional engagement. One possible explanation could lie in the differences in pedagogical training and practical classroom exposure between BA and PhD programs. BA programs often place a greater emphasis on fostering practical teaching skills, instructional innovations, and hands-on experiences. This focus on applied pedagogy may better equip BA-level teachers to effectively implement innovative instructional techniques that directly influence students' behavioral engagement. In contrast, PhD programs typically prioritize theoretical and research-oriented aspects of education, with a stronger emphasis on academic discourse and scholarly inquiry. While this advanced training is undoubtedly valuable, it may not directly translate into enhanced abilities to implement instructional innovations that capture students' behavioral engagement in the classroom setting. This

study also found that the moderating effects of teachers' educational status, gender, and field of graduation were not observed in the relationship between their innovativeness and students' emotional engagement. It is possible that the impact of innovativeness on emotional engagement may be more dependent on teachers' interpersonal skills, emotional intelligence, or rapport building (Huang, 2023; Quin, 2016), rather than their specific demographics or educational credentials.

CONCLUSION AND IMPLICATIONS

Overall, the main finding of the study that EFL teachers' instructional innovativeness predicts their students' behavioral and emotional engagement underscores the importance of fostering a culture of innovation in L2 settings and cultivating a growth mindset among practitioners. By fostering a mindset that values experimentation, innovation, and continuous improvement, teachers can enhance their ability to effectively engage students and promote L2 outcomes. Moreover, interventions that enhance emotional engagement, such as fostering a supportive classroom climate and offering curriculum relevant to students' lives, the sine qua non in L2 settings, can also indirectly boost behavioral engagement by making students more willing to participate actively in classwork.

It is worth noting that the study's findings should be interpreted within the specific context in which it was conducted. Replication studies across diverse educational settings and subject areas would be valuable in further validating and generalizing these results. Furthermore, future research could explore the potential interactions between EFL teachers' personal and psychological dynamics, instructional practices, and other contextual factors, such as school resources, organizational support, and professional development opportunities. Understanding these complex interrelationships could inform support systems to enhance teachers' innovativeness, resulting in increased engagement, motivation, and satisfaction among L2 learners.

REFERENCES

Abdelhalim, S. M. (2017). Developing EFL students' reading comprehension and reading engagement: Effects of a proposed instructional strategy. *Theory and Practice in Language Studies, 7*(1), 37-48.

Afthanorhan, A., Ahmad, N., & Sabri, A. (2015). A parametric approach using z-test for comparing 2 means to multi-group analysis in partial least square structural equation modeling (PLS-SEM). *British Journal of Applied Science & Technology, 6*(2), 194-201.

Afzal, A., & Rafiq, S. (2022). Impact of teachers' instructional techniques on student involvement in class: A Case study. *UMT Education Review, 5*(2), 184-204.

Alsowat, H. (2016). An EFL flipped classroom teaching model: Effects on English language higher-order thinking skills, student engagement and satisfaction. *Journal of Education and Practice, 7*(9), 108-121.

Avdeenko, N. (2020). Teachers' beliefs about barriers towards implementation of innovative teaching practices. In *INTED2020 Proceedings* (pp. 1443-1447).

Casado, M. I., Castano, G., & Arráez-Aybar, L. A. (2012). Audiovisual material as educational innovation strategy to reduce anxiety response in students of human anatomy. *Advances in Health Sciences Education, 17*, 431-440.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

De Souza, R., Parveen, R., Chupradit, S., Velasco, L. G., Arcinas, M., Tabuena, A. C., ... & Ventayen, R. J. M. (2021). Language teachers' pedagogical orientations in integrating technology in the online classroom: Its effect on students' motivation and engagement. *Turkish Journal of Computer and Mathematics Education, 12*(10). 5001-5014.

Eteokleous, N. (2008). Evaluating computer technology integration in a centralized school system. *Computers & Education, 51*, 669–686. https://doi.org/10.1016/j.compedu.2007.07.004

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59*(2), 117–142. https://doi.org/10.3102/00346543059002117

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74*(1), 59-109.

Gefen, D., & Straub, D. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Commun Assoc Inf Syst., 16*, 91–109. https://doi.org/10.17705/1CAIS.01605

Ghaith, G., & Yaghi, H. (1997). Relationships among experience, teacher efficacy, and attitudes toward the implementation of instructional innovation. *Teaching and Teacher Education, 13*(4), 451-458.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook* (p. 197). Springer Nature.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: A comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science, 45*, 616-632.

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., ... & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational Research Methods, 17*(2), 182-209.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems, 116*(1), 2-20.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115-135.

Huang, J. (2023). Relations between teacher–student relationship quality, emotional engagement, and writing performance. *Language Teaching Research*, Advance online publication. https://doi.org/10.1177/13621688231199821

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *The California School Psychologist, 8*, 7-27.

Johnson, B., Stevens, J. J., & Zvoch, K. (2007). Teachers' perceptions of school climate: A validity study of scores from the Revised school level environment questionnaire. *Educational and Psychological Measurement, 67*(5), 833-844. https://doi.org/10.1177/0013164406299102

Jöreskog, K. G., & Wold, H. O. A. (1982). The ML and PLS techniques for modeling with latent variables: Historical and comparative aspects, in Wold, H.O.A. and Jöreskog, K.G. (Eds), *Systems under indirect observation* Part I, North-Holland, Amsterdam, pp. 263-270.

Kurucova, Z., Medová, J., Tirpakova, A., & Nkuyubwatsi, B. (2018). The effect of different online education modes on the English language learning of media studies students. *Cogent Education, 5*(1), 1523514. https://doi.org/10.1080/2331186X.2018.1523514

Lee, Y. J. (2011). A study on the effect of teaching innovation on learning effectiveness with learning satisfaction as a mediator. *World Transactions on Engineering and Technology Education, 9*(2), 92-101.

Lee, J. S. (2012). The effects of the teacher–student relationship and academic press on student engagement and academic performance. *International Journal of Educational Research, 53*, 330-340.

Lim, B. T., Moriarty, H., & Huthwaite, M. (2011). "Being-in-role": A teaching innovation to enhance empathic communication skills in medical students. *Medical Teacher, 33*(12), e663-e669.

Loogma, K., Kruusvall, J., & Ümarik, M. (2012). E-learning as innovation: Exploring innovativeness of the VET teachers' community in Estonia. *Computers & Education, 58*, 808–817. doi:10.1016/j.compedu.2011.10.005

Makhaya, B. K., & Ogange, B. O. (2019). The effects of institutional support factors on lecturer adoption of elearning at a conventional university. *Journal of Learning for Development, 6*(1), 64–75

Matthews, L. (2017). Applying multigroup analysis in PLS-SEM: A step-by-step process. In: Latan, H., Noonan, R. (eds) *Partial least squares path modeling*. Springer, Cham. https://doi.org/10.1007/978-3-319-64069-3_10

Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record, 115*(3), 1-47.

Mih, V., Mih, C., & Dragoş, V. (2015). Achievement goals and behavioral and emotional engagement as precursors of academic adjusting. *Procedia-Social and Behavioral Sciences, 209*, 329-336.

Quin, D. (2017). Longitudinal and contextual associations between teacher–student relationships and student engagement: A systematic review. *Review of Educational Research, 87*(2), 345-387.

Rahmat, N. H. (2020). Innovation in education: Barriers and facilitating factors. *European Journal of Education Studies, 6*(10), 55-66.

Reeve, J., & Tseng, C.-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology, 36*(4), 257–267.

Ringle, C. M., Becker, J. M., Cheah, J. H., & Sarstedt, M. (2022). PLS-SEMs most wanted guidance. *International Journal of contemporary Hospitality Management.*

Robles, A. C. M. O. (2013). The use of educational web tools: An innovative technique in teacher education courses. *IJ Modern Education and Computer Science, 3*, 34-40.

Salessi, S., & Etchevers, M. R. (2020). Innovative work behavior: Development and validation of a scale for teachers. Acta de Investigación *Psicológica, 10*(3), 112-123. https://doi.org/10.22201/fpsi.20074719e.2020.3.363

Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modeling: Alternative methods and empirical results. In M. Sarstedt, M. Schwaiger, and C.R. Taylor (Eds.), *Measurement and research methods in international marketing* (pp. 195–218). Emerald Group Publishing Limited.

Shih, S. S. (2008). The relation of self-determination and achievement goals to Taiwanese eighth graders' behavioral and emotional engagement in schoolwork. *The Elementary School Journal, 108*(4), 313-334.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*, 571-581. https:// doi.org/10.1037/0022-0663.85.4.571

Skinner, E. A., Kindermann, T. A., & Furrer, C. J. (2009). A motivational perspective on engagement and disaffection: Conceptualization and assessment of children's behavioral and emotional participation in academic activities in the classroom. *Educational and Psychological Measurement, 69*(3), 493-525.

Tabatabaei, M., & Gui, Y. (2011). The impact of technology on teaching and learning languages. In A. Méndez-Vilas (Ed.) *Education in a technological world: Communicating current and emerging research and technological efforts* (pp. 513-517)

Teng, Y., & Wang, X. (2021). The effect of two educational technology tools on student engagement in Chinese EFL courses. *International Journal of Educational Technology in Higher Education, 18*(1), 1-15. https://doi.org/10.1186/s41239-021-00263-0

Thomas, N. J., & Baral, R. (2023). Mechanism of gamification: role of flow in the behavioral and emotional pathways of engagement in management education. *The International Journal of Management Education, 21*(1), 100718.

Thurlings, M., Evers, A. T., & Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behavior: A literature review. *Review of Educational Research, 85*(3), 430-471. https://doi.org/10.3102/0034654314557949

van Uden, J. M., Ritzen, H., & Pieters, J. M. (2013). I think I can engage my students. Teachers' perceptions of student engagement and their beliefs about being a teacher. *Teaching and Teacher Education, 32*, 43-54.

Walker, C. O., Greene, B. A., & Mansell, R. A. (2006). Identification with academics, intrinsic/extrinsic motivation, and self-efficacy as predictors of cognitive engagement. *Learning and Individual Differences, 16*, 1-12. https://doi.org/10.1016/j.lindif.2005.06.004

Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology, 35*, 193–202.

Wong, G. K., & Yang, M. (2017). Using ICT to facilitate instant and asynchronous feedback for students' learning engagement and improvements. In *Emerging practices in scholarship of learning and teaching in a digital era* (pp. 289–309). Springer Singapore. https://doi.org/10.1007/978-981-10-3344-5_18

Yazzie-Mintz, E. (2007). Voices of students on engagement: *A report on the 2006 high school survey of student engagement.* Bloomington: University of Indiana, Center for Evaluation Policy.

Zweekhorst, M. B., & Maas, J. (2015). ICT in higher education: Students perceive increased engagement. *Journal of Applied Research in Higher Education, 7*(1), 2-18.

Data Availability Declaration

Data Availability Upon Formal Request:

The primary dataset utilized in this study is not publicly accessible; however, it is available to researchers upon a formal request.

Author Contributions

Author Contributions:

The sole author of this research, Yusuf Demir, was responsible for the conceptualization, methodology formulation, data collection, analysis, and interpretation. Furthermore, Yusuf Demir took charge of drafting the initial manuscript, revising it critically for vital intellectual content, and finalizing it for publication. The author has read and approved the final manuscript and takes full accountability for the accuracy and integrity of the work presented.

Author(s)' statements on ethics and conflict of interest

Ethics statement: I hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. I take full responsibility for the content of the paper in case of dispute.

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